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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,748	02/20/2004	Alexandros T. Demos	008514/DSM/BCVD/JW	7358

7590 09/29/2004  
PATENT COUNSEL  
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EXAMINER	
NGUYEN, KHIEM D	
ART UNIT	PAPER NUMBER

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<b>Application No.</b> 10/783,748	<b>Applicant(s)</b> DEMOS ET AL.	
	<b>Examiner</b> Khiem D Nguyen	<b>Art Unit</b> 2823	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>022004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(f) he did not himself invent the subject matter sought to be patented.

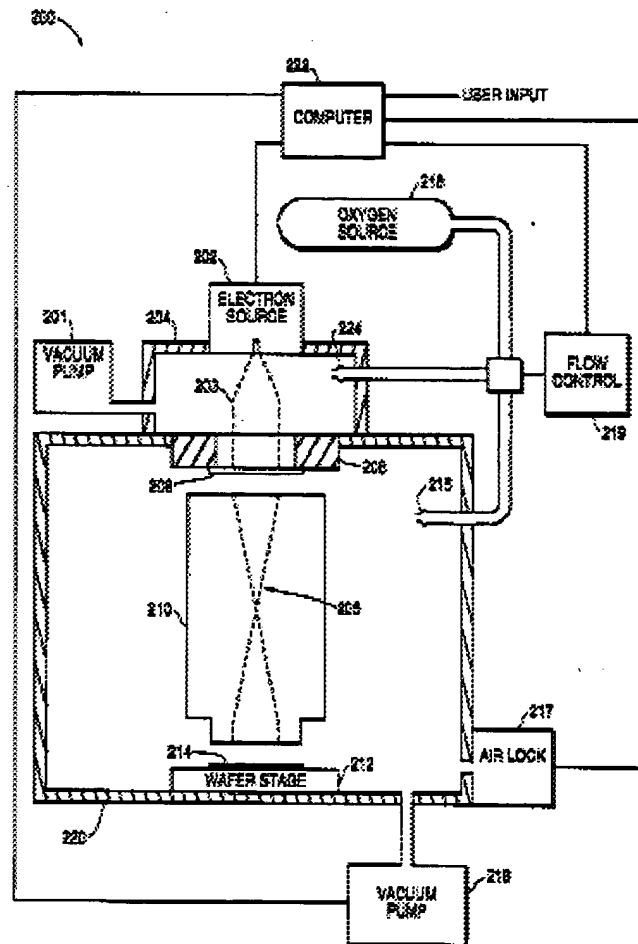
Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Somekh (U.S. Patent 6,394,109).

The applied reference has a common claimed invention with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

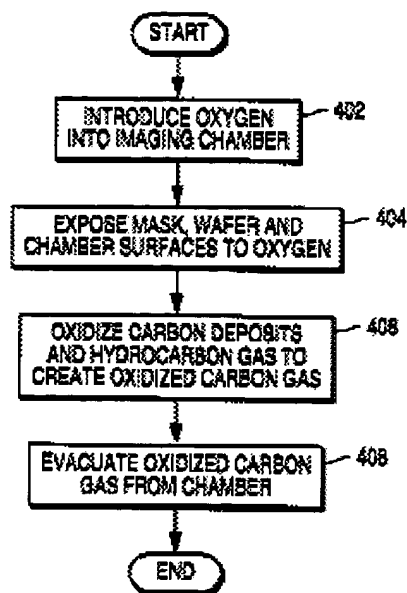
In re claim 1, Somekh discloses a method for cleaning an electron beam treatment apparatus 200 that comprises: generating an electron beam 205 (col. 4, lines 19-34 and FIG. 2A) that energizes a cleaning gas (O<sub>3</sub>, N<sub>2</sub>O) (col. 5, lines 39-56) in a chamber of the electron beam treatment apparatus; monitoring an electron beam current; adjusting a pressure of the cleaning gas to maintain the electron beam current at a substantially

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constant value; and stopping when a predetermined condition has been reached (col. 5, line 66 to col. 6, line 30).

**FIG. 2A**

In re claim 2, Somekh discloses wherein the predetermined condition is that the cleaning gas pressure becomes substantially constant for a predetermined length of time (col. 10, lines 49-65 and **FIG. 4**).



In re claim 3, Somekh discloses wherein the predetermined condition is that a predetermined length of time has elapsed (col. 10, lines 49-65).

In re claim 4, Somekh discloses wherein the cleaning gas comprises an oxygen-based gas (col. 5, lines 38-56).

In re claim 5, Somekh discloses wherein the oxygen-based gas comprises one or more of O<sub>2</sub>, ozone, NO, and H<sub>2</sub>O (col. 5, lines 38-56).

In re claims 6 and 7, it is well-known to one of ordinary skill in the art at the time of the invention was made that the cleaning gas comprises a fluorine-based gas may comprises one or more of NF<sub>3</sub>, F<sub>2</sub>, CF<sub>4</sub>, C<sub>2</sub>F<sub>6</sub>, C<sub>3</sub>F<sub>8</sub>, SF<sub>6</sub>.

In re claim 8, Somekh discloses a method for cleaning an electron beam treatment chamber 200 that comprises: generating an electron beam 205 (col. 4, lines 19-34 and FIG. 2A) that energizes a cleaning gas (O<sub>3</sub>, N<sub>2</sub>O) (col. 5, lines 39-56) in a chamber of the

electron beam treatment apparatus; and stopping after a predetermined length of time has elapsed (col. 5, line 66 to col. 6, line 30).

In re claim 9, Somekh discloses wherein the cleaning gas comprises an oxygen-based gas (col. 5, lines 38-56).

In re claim 10, Somekh discloses wherein the oxygen-based gas comprises one or more of O<sub>2</sub>, ozone, NO, and H<sub>2</sub>O (col. 5, lines 38-56).

In re claims 11 and 12, it is well-known to one of ordinary skill in the art at the time of the invention was made that the cleaning gas comprises a fluorine-based gas may comprises one or more of NF<sub>3</sub>, F<sub>2</sub>, CF<sub>4</sub>, C<sub>2</sub>F<sub>6</sub>, C<sub>3</sub>F<sub>8</sub>, SF<sub>6</sub>.

In re claims 13, 14, and 15, Somekh discloses wherein a gas pressure of about 1 Torr or greater is maintained in the chamber (col. 4, lines 35-60).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

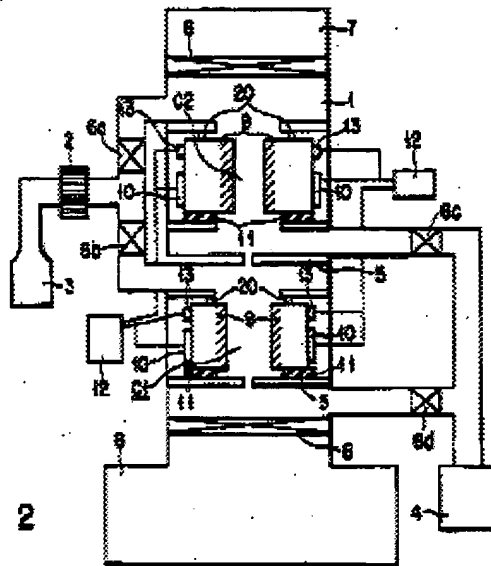
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohtoshi et al. (U.S. Patent 5,539,211).

In re claim 1, Ohtoshi discloses a method for cleaning an electron beam treatment apparatus that comprises: generating an electron beam 7 that energizes a cleaning gas (O<sub>2</sub>, CF<sub>4</sub>) in a chamber of the electron beam treatment apparatus (col. 11, line 50 to col. 12, line 58 and **FIG. 2**); monitoring an electron beam current (col. 14, lines 39-56);

adjusting a pressure of the cleaning gas to maintain the electron beam current at a substantially constant value; and stopping when a predetermined condition has been reached (col. 11, line 50 to col. 12, line 14).



In re claim 2, **Ohtoshi** discloses wherein the predetermined condition is that the cleaning gas pressure becomes substantially constant for a predetermined length of time (col. 11, line 50 to col. 12, line 9).

In re claim 3, **Ohtoshi** discloses wherein the predetermined condition is that a predetermined length of time has elapsed (col. 11, line 50 to col. 12, line 58).

In re claim 4, **Ohtoshi** discloses wherein the cleaning gas comprises an oxygen-based gas (col. 12, lines 10-16 and col. 12, lines 59-65).

In re claim 5, **Ohtoshi** discloses wherein the oxygen-based gas comprises one or more of O<sub>2</sub>, ozone, NO, and H<sub>2</sub>O (col. 12, lines 10-16 and col. 12, lines 59-65).

In re claim 6, **Ohtoshi** discloses wherein the cleaning gas comprises a fluorine-based gas (col. 12, lines 10-16 and col. 12, lines 59-65).

In re claim 7, **Ohtoshi** discloses wherein the fluorine-based gas comprises one or more of  $\text{NF}_3$ ,  $\text{F}_2$ ,  $\text{CF}_4$ ,  $\text{C}_2\text{F}_6$ ,  $\text{C}_3\text{F}_8$ ,  $\text{SF}_6$  (col. 12, lines 10-16 and col. 12, lines 59-65).

In re claim 8, **Ohtoshi** discloses a method for cleaning an electron beam treatment chamber that comprises: generating an electron beam 7 that energizes a cleaning gas ( $\text{O}_2$ ,  $\text{CF}_4$ ) in a chamber of the electron beam treatment apparatus (col. 11, line 50 to col. 12, line 58 and **FIG. 2**); and stopping after a predetermined length of time has elapsed (col. 11, line 50 to col. 12, line 14).

In re claim 9, **Ohtoshi** discloses wherein the cleaning gas comprises an oxygen-based gas (col. 12, lines 10-16 and col. 12, lines 59-65).

In re claim 10, **Ohtoshi** discloses wherein the oxygen-based gas comprises one or more of  $\text{O}_2$ , ozone,  $\text{NO}$ , and  $\text{H}_2\text{O}$  (col. 12, lines 10-16 and col. 12, lines 59-65).

In re claim 11, **Ohtoshi** discloses wherein the cleaning gas comprises a fluorine-based gas (col. 12, lines 10-16 and col. 12, lines 59-65).

In re claim 12, **Ohtoshi** discloses wherein the fluorine-based gas comprises one or more of  $\text{NF}_3$ ,  $\text{F}_2$ ,  $\text{CF}_4$ ,  $\text{C}_2\text{F}_6$ ,  $\text{C}_3\text{F}_8$ ,  $\text{SF}_6$  (col. 12, lines 10-16 and col. 12, lines 59-65).

In re claims 13, 14, and 15, **Ohtoshi** discloses wherein a gas pressure of about 1 Torr or greater is maintained in the chamber (col. 11, line 50 to col. 12, line 9).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K.N.  
September 27<sup>th</sup>, 2004



W. DAVID COLEMAN  
PRIMARY EXAMINER